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ET-41

March 1935

# INEXPENSIVE METAL FLATS AND CAGES FOR REARING INSECTS

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Compact, light, yet durable metal-and-wood flats for breeding hessian flies and testing strains of wheat for resistance to the hessian fly were built in the laboratory by unskilled labor at a cost of about 20 cents per unit for material. This low cost is dependent upon knocked-down construction and facilities for purchasing the cut metal. One man, in an emergency, completely assembled 24 flats in 4 hours.

The sides of the flat are formed from a single strip of 24-gage galvanized iron, 6 by 42 inches. The metal was purchased by the pound in sheets measuring 36 by 96 inches. At small expense 12 strips, 6 by 42 inches, were cut from each sheet, and  $\frac{1}{2}$  inch of one edge of each strip was bent to form a right angle. The remaining strip, 12 by 36 inches, was cut up and used to form the framework of the cages. The cypress bottoms (1 by 10 by 10 inches) were purchased ready cut.

To assemble the flat, the  $\frac{1}{2}$ -inch angle is bent down with a wooden mallet to form a semitubular edge. The strip is then marked off into four 10-inch sections and a 2-inch lap. Using the hands as illustrated (fig. 1), the box is bent to shape over the end of a table or hardwood board. The edge of the lap is opened and locked over the edge of the opposite side. One rivet is sufficient to hold this corner. The flat is completed by nailing the bottom in place with  $1\frac{1}{2}$ -inch galvanized roofing nails.

In making the cage shown in the illustration, two strips of 24-gage galvanized iron, 1 by 36 inches, are soldered to the parallel edges of a strip of 24-mesh wire cloth, 6 by 36 inches. A piece of metal 1 by 6 inches, bent to a  $\frac{1}{2}$ -inch right angle, is soldered across one end and a similar piece is soldered across the center of each strip. This panel, which forms the sides of the cage, is then bent to form as described in making the flats. The removable top is made of a 24-gage galvanized iron strip, 1 by  $36\frac{1}{2}$  inches, bent to a  $\frac{1}{2}$ -inch right angle. The corners are mitered at the top and the metal is bent to form a flanged top to which the wire cloth is soldered.



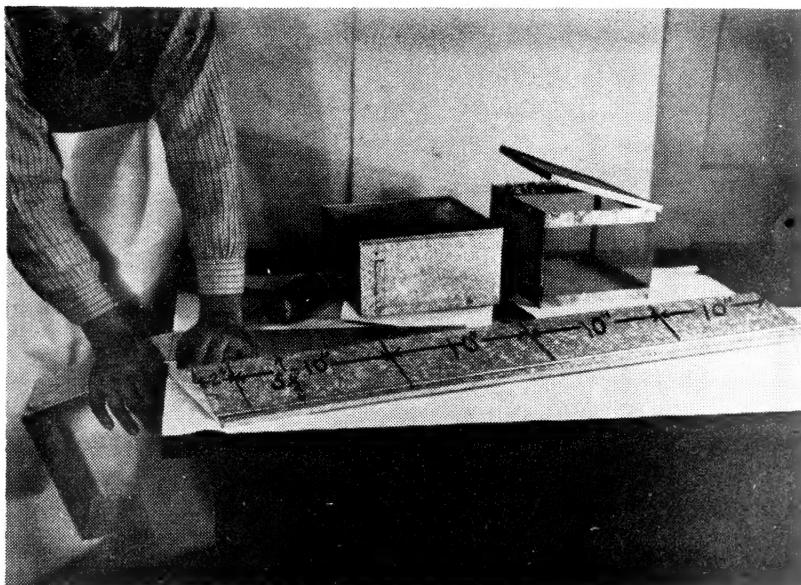


Figure 1.—Metal flat, cage, and process of making a flat.

